

**** TURN IN CH. 21 CW ****

WARM UP:

p. 499 #2 letters (b) and (c)-- Do the following:

- (a) Write the hypotheses**
- (b) Describe Type I error in context**
- (c) Describe Type II error in context**
- (d) Describe Power in context**
- (e) Assuming $\alpha = 0.05$, what level of confidence would you use if you were creating a confidence interval?**

LETTER (b)

(a) $H_0: p = 0.10$ $\alpha = 0.05$

$H_a: p \neq 0.10$

(b) Stating that the percent of college juniors who apply for study abroad is not 10% anymore, when really, it is.

(c) Stating that the percent of college juniors who apply for study abroad is still 10%, when really is is not 10%.

(d) Stating that the percent of college juniors who apply for study abroad is not 10%, and it really is not.

(e) Conf level = 95%

Letter (c)

(a) $H_0: p = 0.22$ $H_a: p > 0.22$ $\alpha = 0.05$

(b) Stating that the medication is effective, when really it is not effective. (Stating that the % that experience headache relief is greater than 22%, when really it is 22%)

(c) Stating that the medication is not effective, when really it is. (Stating that the percent experiencing relief is only 22%, when really it is higher)

(d) Stating that the medication is effective, and it is. (stating that the % with relief is greater than 22%, and it is).

(e) Conf. level = 90%

HW: p. 500 #10

(a) $p\text{-hat} = 140/250 = 0.56$

Conditions met --> Normal Model --> 1 prop Z-Interval

$$0.56 \pm (1.96) \sqrt{\frac{(0.56)(0.44)}{250}} = (0.49847, 0.62153)$$

We are 95% confident that the true % of heads is between 49.847% and 62.153%.

(b) $H_0: p = 0.50$ $H_a: p \neq 0.50$

No it does not, since 50% is still in the interval.

(c) Assuming the alternative hypothesis is \neq , then $\alpha = 0.05$